

Appl. No.: 10/693,823

Applicant : Yaron Mayer et. al.

Reply to Office action of Dec. 15, 2006

REMARKS/ARGUMENTS

1. Regarding clause 1 of your examination report, as far as I understand the foreign priority documents can be filed without surcharge until before the issue fee is paid. I will file them on time.
2. Regarding clauses 2-3 of your examination report, I have amended page 8 of the specification as requested. I have also corrected a missing period on that page. I have not found other errors in the specification.
3. Regarding clause 4 of your examination report, I have amended the claims accordingly.
4. Regarding clause 5 of your examination report, I have amended the claims accordingly.
5. Regarding clause 7 of your examination report, US6590661 patent which you quoted focuses on detection based on taking into account the exhaled CO₂ gas during speaking, which is a limited design because: a. It means that the system as claimed in that patent can only be used to detect sounds produced by humans or animals standing near the microphone, b. It might confuse breathing with speech and thus for example at least the breathing might add noise to the sound detection. However, to be on the safe side I have temporarily removed the reference to optical detection from the relevant claims. However this is being removed without prejudice and we reserve the right to restore relevant improved claims. Since independent claims 1 and 9 should now be allowed, their dependent claims should also be allowed since they recite additional patentable matter over the independent claims.

6. Regarding clause 8 of your examination report, as far as I understand US patent 5122805 mentions acoustic signals only as part of a method for detecting temperature profiles in the atmosphere, so this works differently and is not designed to be used as a microphone for detecting existing sounds, and therefore it is not relevant to the system or method of the present patent application.
7. Regarding clause 9 of your examination report regarding US patent 6044160, I have amended claim 18 accordingly. Since claim 18 should now be allowed, dependent claims 19 and 21 should also be allowed since they recite additional patentable matter over independent claim 18.

Therefore, in view of the above, I respectfully request that a timely notice of allowance be issued in this case. However, I would appreciate it very much if you could contact me in advance (for example by phone to 972-2-5665072 or by email to aron@vms.huji.ac.il) before issuing the notice of allowance in order to give me a chance to make final adjustments in the claims.

Also, if there are further issues that need clarification I would appreciate it very much if you contact me before issuing a further office action.

Respectfully submitted,
Yaron Mayer

sound waves) have for example on an interference pattern of two or more light beams, so that the deviations of the normal interference pattern are detected, or for example detect the small Doppler shifts that this can cause. This variation might be called for example an optical microphone without a membrane. Another possible variation is to trap for example some preferably very small particles or for example ionized gas inside some enclosure and thus measure the changes in light caused by the movements of these minute particles. Another possible variation is to similarly use for example other types of frequency, such as for example very high electromagnetic frequency. Of course various combinations of the above and other variations can also be used.

2. Preferably the microphone is naturally at least partially directional, for example by putting the sensors inside a small acoustic tube, so that the tube itself allows more sounds to come in from its front than from its sides. Preferably the Microphone can be made even more directional by using a number of sensors and/or a number of high frequency sources inside the microphone, so that by taking into account the differential effect on them, the direction of the sound can be determined, and sounds from unwanted directions can be cancelled out for example by appropriate phase shifting. Another possible variation is to use for example this shifting in order to allow the user to electronically change the level of directionality and/or to electronically change the angle of input from which the sound is picked up. Preferably the default level of directionality is not too high, such as for example not less than a spread of 20 or 30 degrees, since otherwise for example the user's movements can cause the speech to fluctuate in and out of focus. Another possible variation is to use for example a Fourier transform in order to filter out the relevant directions. If MEMS sensors are used, the directionality control can be even easier, since each MEMS chip can use a large array of such sensors, so data from a number of different sensors can be used,